

**REMARKS**

Claims 1, 2, 8, and 89-104 are pending in this application. Claims 3-4, 6-7, 9, 11, 13-15, 17-21, 73-75, and 77-88 were previously withdrawn from consideration. Claims 89-104 are new.

Claim 1 and all claims dependent therefrom have been amended to replace the transitional term “comprising” with “is” or “are.” Claim 1 has also been amended to delete the group “CF<sub>2</sub>” for group Z.

Claim 1 has been further amended for clarity to recite that “each R<sup>1</sup> is, independently, hydrogen, a branched or straight chain C<sub>1</sub> to C<sub>25</sub> alkyl group, a cationic counterion, or both R<sup>1</sup> form a cycloalkyl group or a heterocycloalkyl group . . .” Support for the language cycloalkyl group and heterocycloalkyl group can be found in the specification at, *inter alia*, page 6, lines 22-27.

In addition, claim 1 has been amended to recite “R<sup>3</sup> is . . . an oleate group . . .” Support for the amendment can be found in the specification at, *inter alia*, page 6, line 20 and Table 1 (pages 13-14) of the present invention and Table 1 (pages 10-11) in the provisional patent application, where C<sub>17</sub> denotes the oleate group C<sub>17</sub>H<sub>33</sub>.

Claim 1 has been amended to recite the stereochemistry at carbon a is “greater than 95% of one enantiomer with respect to the other enantiomer . . .” Support for this amendment can be found in the specification at, *inter alia*, page 6, lines 12. The term “substantially” has been deleted from claim 1.

New claim 89 has been added to define another feature of the invention. Support for new claim 89 can be found in original claim 1 of the provisional application and throughout the specification and claims of the present invention. Support for new claims 90-104 can be found in original claims 40-55 of the provisional application and original claims 73-88 of the present invention.

Applicants respectfully request the Examiner to continue the search of claim 1 and all claims dependent therefrom as well as new claims 89-104. Applicants also request method claims 73-75 and 77-88 be rejoined and allowed upon the allowance of claim 1.

Finally, the Office Action at paragraph 7 states that the elected species does not fit into the generic claims. Claim 1 has been amended to recite that R<sup>3</sup> can be an oleate group. New claim 89 also recites the same feature. Therefore, the elected species falls under generic claims 1 and 89.

**Objection under 35 U.S.C. § 132(a)**

The Office Action objects to the amendments made in Table 1 filed on September 22, 2008. Specifically, the Office Action states that no support for the amended species exists in the originally filed disclosure.

However, support for the amendment to Table 1 in the present invention can be found at page 10 and Table 1 of the provisional patent application. The provisional application was incorporated by reference in its entirety at page 1, lines 8-11 of the present invention. Specifically page 10 of the provisional application recites “[w]here applicable C<sub>15</sub> denotes C<sub>15</sub>H<sub>31</sub> and C<sub>17</sub> denotes C<sub>17</sub>H<sub>33</sub>.” Therefore, support exists for the amendments made in the previous Response.

**Rejections under 35 U.S.C. § 112**

The Office Action rejected claims 1, 2, and 8 as being indefinite. Specifically the Office Action asserts that the term “comprises” is open ended and provides an unclear scope for the claimed compounds. Claims 1, 2, and 8 have been amended for clarity. For example, amended claim 1 now recites “Z ~~comprises~~ is oxygen, sulfur, NR<sup>1</sup>, CHF, CF<sub>2</sub>, or CHOR<sup>2</sup> . . . .” Likewise, claims 2 and 8 have been amended accordingly.

The Office Action further rejected claims 1, 2, and 8 as being indefinite for reciting “R1 form a cyclic or heterocyclic group.” Claim 1 has been amended to recite a cycloalkyl group or a heterocycloalkyl group. As discussed above, support for this language can be found in the

specification at, *inter alia*, page 6, lines 22-27. Furthermore, this language is clearly defined within the specification.

The Office Action additionally rejected claims 1, 2, and 8 as being indefinite with respect to the term “substantially.” Claim 1 has been amended to delete the term “substantially.” Claim 1 has also been amended to recite the stereochemistry at carbon a is “greater than 95% of one enantiomer with respect to the other enantiomer . . . .” In view of the amendments applicant respectfully requests the rejection be withdrawn.

**Rejection under 35 U.S.C. § 102**

The Office Action asserts that the journal article “Synthesis of Chiral ( $\alpha,\alpha$ -Difluoroalkyl)phosphonate Analogues of (Lyso)phosphatidic Acid via Hydrolytic Kinetic Resolution” *Org. Lett.*, Vol. 4, No. 23, pgs. 4021-4024 co-authored by Glenn Prestwich and Yong Xu (hereinafter “Xu *et al*”) is prior art under 35 U.S.C. § 102(b). The rejection is addressed individually in view of claim 1 and new Claim 89.

With respect to claim 1, the claim has been amended to recite “Z is oxygen, sulfur, NR<sup>1</sup>, CHF, CF<sub>2</sub>, or CHOR<sup>2</sup>.” Therefore, claim 1 does not include compounds where Z is CF<sub>2</sub>. Turning to the Xu *et al.*, the reference only discloses (difluoroalkyl)phosphonates (*i.e.*, Z = CF<sub>2</sub> in formula I of claim 1). Xu *et al.* does not disclose any other compounds other than (difluoroalkyl)phosphonates. In the absence of any disclosure of other compounds in Xu *et al.* other than (difluoroalkyl)phosphonates, Xu *et al.* cannot anticipate claim 1 and all claims dependent therefrom.

Turning to new claim 89, this claim is identical to original claim 1 of the provisional application with the exception that Z in formula I is only CF<sub>2</sub>. Therefore, new claim 89 clearly has support in the provisional application and receives the benefit of the priority date of April 9, 2003. The publication date of Xu *et al.* is August 6, 2002. Therefore, with respect to new claim 89, Xu *et al.* is arguably prior art under 35 USC 102(a) and not 102(b).<sup>1</sup> In the Response dated

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<sup>1</sup> Applicants also contend that claim 1 of the present invention has support in the provisional application. However, in view of the amendments and arguments presented for the patentability of claim 1, it was not necessary to address

March 12, 2009, the inventorship of the present invention was amended so that the authorship of Xu *et al.* was identical to the inventorship of the present invention. In view of the change of inventorship, Xu *et al.* is not prior art under 35 U.S.C. § 102(a) to new claim 89. Therefore, new claim 89 cannot be anticipated by Xu *et al.*

Not only is the present invention novel over Xu *et al.*, the present invention would not have been obvious as well.<sup>2</sup> The synthetic procedures disclosed in Xu *et al.* are specific and unique to the preparation of (difluoroalkyl)phosphonates. Indeed, referring to Scheme 1 of Xu *et al.*, the starting material 1 is unique in that it is a difluoro iodo compound. If one of the fluoro groups were substituted for another group (*e.g.*, hydrogen), a carbene would form, which would result in the formation of various side-products and not reaction product 2 in Scheme 1 of Xu *et al.* Indeed, the synthesis of (monofluoroalkyl)phosphonates ( $Z=CHF$ ) is very different from the synthesis of the (difluoroalkyl)phosphonates disclosed in Xu *et al.* (*see* Figures 1, 2, and 8-10 of the present invention for exemplary synthetic procedures for producing (monofluoroalkyl)phosphonates). Therefore, the present invention would not have been obvious in view of Xu *et al.*

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this issue further.

<sup>2</sup> Although the Office Action did not reject the present invention under 35 USC 103, arguments are presented in view of a possible rejection.

**CONCLUSION**

Pursuant to the above amendments and remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

No additional fee is believed to be due; however, the Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to Deposit Account No. 50-1513.

Respectfully submitted,

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